

State of the New England Environment 1970-2000



remember the past...
protect the future

“EPA was born 30 years ago at a time when rivers caught fire and cities were hidden under dense clouds of smoke. We’ve made remarkable progress since then. But we can’t rest on our success.

Our mission to protect the environment, and to protect public health, is a mission without end. New challenges loom over the horizon as surely as the new day.

We must continue our work to ensure that with each new dawn, the sun shines through clear skies and upon clean waters—and all our families enjoy the blessings of good health.”

— Carol M. Browner, EPA Administrator

This report is dedicated to the memory of

U.S. Senator John H. Chafee of Rhode Island
1922 - 1999

One of this country's great champions of environmental protection. Because of his tireless leadership, Americans breathe cleaner air, drink safer water and are far less threatened by toxic wastes. This generation and future generations of Americans are deeply indebted to him.

dedication

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"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has" —Margaret Mead

It has often been said that a nation's most valuable asset is its people. We at EPA New England know this to be true and our work is guided by that premise.

The most important action we can take to protect our environment is to build and expand the partnerships we have with the people of New England. Whether it's state agencies, tribes, municipal governments, businesses, nonprofit organizations or individual citizens, the bonds that we forge with these groups will be critical in our success or failure in improving our environment.

This 40-page report on the State of the New England Environment is part of that effort. Well-informed citizens and communities are the foundation for clean water, healthy air and green vibrant landscapes.

This year being the 30th anniversary of EPA and Earth Day, we've made a special effort in this report to examine not only today's environment but how it compares to 1970 when the environmental movement in this country was launched.

This report will show that we've made enormous progress. In one generation, we have reversed the effects of more than a century of industrial pollution and environmental degradation. We're also well on our way to restoring our treasured natural resources. And we have accomplished all of this while building the strongest economy in the nation's history.

But our work is far from finished. Many communities and neighborhoods—especially in our cities—have yet to share fully in the benefits of our environmental progress. We also face environmental problems that were scarcely understood 30 years ago - issues like sprawl, nonpoint source pollution and global climate change. EPA New England is tackling these challenges with a vengeance and has become a leader in finding new innovative ways to deal with them.

Much of what we have accomplished is a credit to John P. DeVillars, who ran EPA New England for six years before departing in January, and to those regional administrators who preceded him. Even more credit should go to the EPA New England staff who for years have worked long and hard to carry out the agency's mission. The outstanding work of these public servants has yielded huge dividends for our environment and I have every intention of carrying that momentum forward in the years to come.

But, in the end, we at EPA do not hold the key to protecting our environment. As you will see in this report, the common thread in all of our successes is strong cooperation and support from outside the agency—people like you who have taken up the challenge of achieving a better environment. And I am confident that the people of New England will continue to take up that challenge for the next 30 years, and for the generations to come.

Thank you!

Mindy S. Lubber
Regional Administrator, EPA New England

open letter to the people of new england

introduction



Photo: Steve Delaney

As we celebrate the arrival of a new millennium, we are also heralding the 30th anniversary of Earth Day and the 30th birthday of the EPA. It seems an appropriate time to look at the victories we have won and the challenges that lie ahead.

As we close out the 20th century, we can be proud that efforts to protect and enhance our environment are paying substantial dividends. In fact, the environmental protection movement has been arguably the most effective public policy initiative of our generation. Throughout New England, the air we breathe is cleaner, the water we drink and play in is healthier and the land we live on is safer.

Evidence of our success is at the doorstep of New England's hub. Fifteen years ago, Boston Harbor was among the nation's dirtiest. Today, after billions of dollars of investment, eight miles of beaches are open to swimmers, seals and porpoises have returned and the harbor's commercial lobster and shellfish industry is contributing more than \$10 million annually to the local economy.

We've made great strides not just in Boston Harbor but across New England. Our rivers have been transformed from veritable sewers to recreational havens for anglers, boaters and tourists. River fronts, too, have been transformed into bikeways, parks and greenways. And in all corners of the region, we're breathing cleaner air no longer tainted by lead.

As we enter the new millennium, we need to be mindful, despite our success, that the environmental protection job is far from done. Moreover, we must recognize that the strategies that have brought us so much over the past 30 years need to be constantly refined in order to meet new and changing circumstances. To that end, EPA New England, in concert with our many partners, has developed a set of new and promising initiatives.

Central to these new strategies is forging strong alliances with those who live in the communities we're working hard to protect. This collaborative approach has proven particularly effective in densely-populated urban areas—communities which have, frankly, been under-served by EPA in the past.

One example is the Clean Charles 2005 initiative. By bringing together a diverse coalition of environmental groups, state and municipal agencies, businesses, universities and others who live and work near the Charles River, we have made enormous progress in achieving our goal of making the lower Charles River fishable and swimmable by Earth Day 2005.

We're also applying this teamwork approach to businesses, public agencies, universities and others that EPA regulates. By using new technologies and old fashioned Yankee ingenuity, EPA and our partners can often help these institutions prevent pollution well before it becomes a problem—and at much less cost to consumers and taxpayers alike.

Market-based pollution trading programs represent another promising, innovative environmental initiative. In Manchester, NH and Wayland, MA, for example, EPA New England has worked with elected representatives, environmentalists, business leaders and community activists to achieve greater reductions in pollution at significantly less cost than would have been achieved through traditional regulatory approaches.

None of these collaborative or market-based solutions will work, however, without the use of a more traditional weapon in our arsenal—strong enforcement actions against those who fundamentally seek to ignore their environmental obligations. We have made this clear from Pittsfield, MA, in our case against General Electric for polluting the Housatonic River, to Cape Cod where we have issued three unprecedented orders halting training and requiring cleanup work at the Massachusetts Military Reservation which has endangered part of the Cape's sole source drinking water aquifer.

As we enter the new millennium, we should remind ourselves of the values and traditions that make New England so unique. Among those traditions is New England's long history of active citizen involvement. EPA New England places enormous value on this tradition and has actively fostered and nurtured public involvement in all of its programs. We hope that this report will galvanize even greater participation in our environmental protection efforts.

protecting public health



Photo: Roy Crystal

Every American has a right to healthy air, clean drinking water and freedom from toxic chemicals. Since 1970, we've made exceptional progress toward achieving this basic right for New England's residents. Our air is substantially cleaner, our rivers no longer run with untreated sewage and our drinking water is safer. We've also curbed numerous health threats like lead in gasoline and bacteria in swimming areas.

We need to do more, however, to reduce threats from smog, airborne toxics, acid rain and radon. We need to stop childhood lead poisoning and asthma. In tackling these challenges, we will adapt our strategies to reflect the changing patterns of New England's society. And, more importantly, we will continue to forge strong alliances with all of those in New England who we are working to protect.

Reducing Smog

New England has made great strides in combating summer-time smog. In 1983, air quality in New England violated ground-level ozone health based standards on 90 days. During 1999, air quality violated those standards on only 35 days. This progress has been achieved thanks to major improvements at power plants, the use of cleaner-burning fuels for most vehicles, stricter tailpipe standards and a new generation of standards for trucks, buses and marine vessels (Figure 1).

But there is more work to be done. Since passage of the last Clean Air Act in 1990, EPA has tightened the health-based standards for smog to ensure the protection of children, the elderly and those with certain illnesses. To meet these standards in New England, we'll need to further reduce emissions of nitrogen oxides (NOx) and certain organic compounds that react to form ground level ozone, a harmful component of smog (Figure 2). And, given that much of the region's air pollution blows in from other parts of the country, the cutbacks will need to come both in New England and in upwind states outside of New England.

One tool in our arsenal is a new rule, to be implemented in 2003, that will require a 25 percent reduction of NOx emissions in 22 states in the eastern half of the country. EPA is encouraging states to meet the reduction by adopting a cap and trade program for large NOx sources, following a model approved last summer by a group of states, including four in New England. That program will halve emissions of NOx from utilities and large boilers in participating states, with trading reducing the cost by \$179 million.

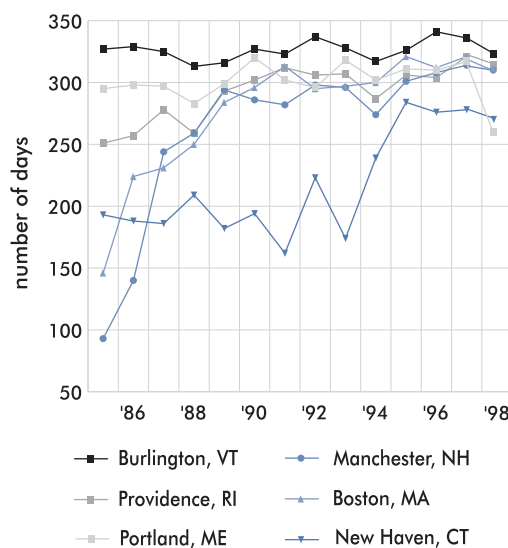
EPA also filed a lawsuit last year against power companies in the Mid-Atlantic and Midwest states, accusing them of illegally expanding and rebuilding their older plants without installing strict pollution control devices that are required for new or expanding power plants. The lawsuit comes amid a wave of deregulation in the electric industry which is encouraging more use of older, more polluting plants—many of them in New England.

EPA New England will continue to communicate with the public about air quality conditions. EPA's World Wide Web site on ozone and air quality, www.epa.gov/region01/oms, tracks smog levels from May through September, showing whether the air on a particular day is unhealthy and forecasting conditions for the next day. We also provide a free smog alert service, available through the web site or by calling 1-800-821-1237.

Transportation: Miles To Go

Clean air is directly related to cleaner vehicles and cleaner fuels. On both of these fronts, we've made huge progress. Today's new cars operate 90 percent cleaner than they did 30 years ago. And we've slashed lead levels in the air by

Figure 1. New England's Historical Trends in Healthy* Air Quality Days



(Based on County-wide Air Quality)

*air pollutant levels lower than 50% of the air quality standards

source: EPA AIRS

January 1, 1970

National Environmental Policy Act (NEPA) requiring an Environmental Impact Statement for every large project approved or funded by the federal government.

1970's



April 22, 1970

First Earth Day raises awareness of threats to the environment.

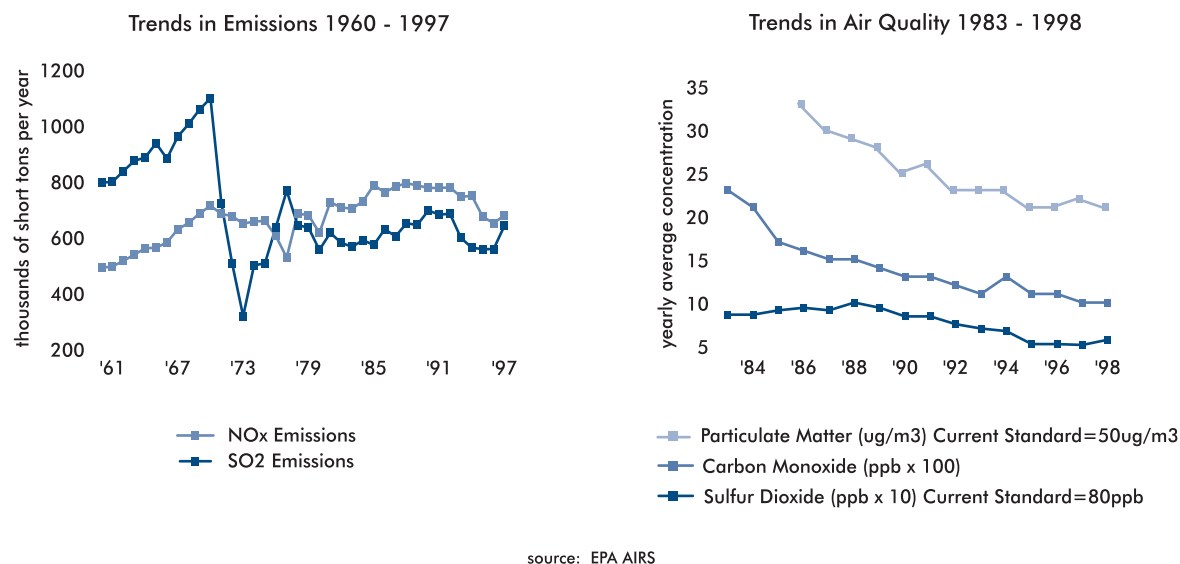
December 1970

Clean Air Act, amending previous air laws, setting auto emission standards & requiring state implementation plans to achieve air quality standards.

December 3, 1970 • • • •
U.S. EPA Established signed into law by President Nixon.



Figure 2. Progress in Cleaning and Protecting New England Air Quality



98 percent due to the 27-year-old ban on leaded gasoline. Still, cars and trucks continue to be the region's largest source of air pollution, emitting about one-third of all volatile organic compounds, nitrogen oxides and air toxics into our air. The reason is simple: there are more cars on the road and the number of miles we're driving is skyrocketing. In just 30 years, the total number of vehicle miles driven in New England has nearly doubled. And the trend is accelerating (Figure 3).

EPA has launched a program to make our cars and trucks run even cleaner. Late last year, EPA finalized regulations that will result in cleaner gasoline and require for the first time that cars and light trucks meet the same emission requirements. The tougher light truck requirement is particularly important because it will bring popular sport utility vehicles (SUVs), which are classified as light trucks, under tighter air emission standards. The new standards, which will be phased in starting in 2004, are expected to produce a

77 percent reduction in car emissions and as much as a 95 percent reduction in truck and SUV emissions. Additional cutbacks will also be achieved through new vehicle inspection and maintenance programs recently implemented in Massachusetts and Rhode Island.

Indoor Air Quality and Asthma

The quality of the indoor air we breathe is an important health factor. Most people spend 90 percent of their time indoors, making indoor air pollution a serious issue in homes, schools, factories and offices. EPA studies have shown that indoor pollution levels may be as much as five times greater than outside levels. Sources of indoor air pollution include: burning fuels which result in elevated levels of carbon monoxide; tobacco smoke; pesticides; and biological contaminants such as dust mites, bacteria, fungi and viruses.

Children are especially vulnerable to harmful indoor air pollution because they breathe more air relative to their body

1972
Low Sulfur Fuel Reductions by New England States Begin, significantly lowering sulfur dioxide emissions.



1972
EPA Bans Use of DDT, a widely-used pesticide found to be cancer-causing and accumulating in the food chain.

1971
Lead-Based Paint Poisoning Act restricts lead-based paints in residential structures & bans lead paint on cribs and toys.

October 18, 1972
Federal Water Pollution Control Act requires states to establish water quality standards and reduce pollution from point sources through NPDES permits. EPA embarks on a major national commitment to upgrade sewage treatment facilities.

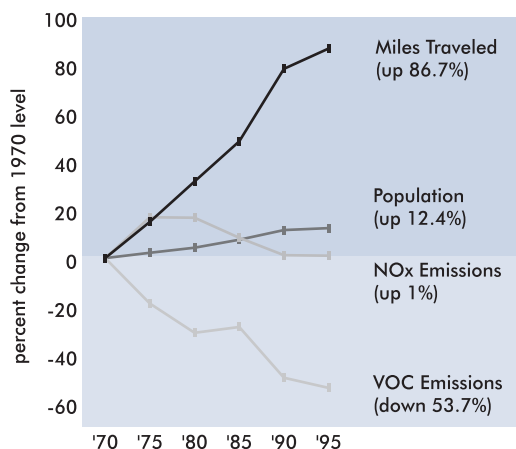
Keeping Kids Lead Safe

Eliminating lead from gasoline was a giant step forward in the country's battle to combat lead poisoning. However, exposure to lead-based paints continues to be a major problem in New England, especially in our urban areas where the housing is older. Despite banning lead-based paints in 1978, New England still has cities and tribal reservations where one-third of the children under the age of six have harmful lead levels in their blood, causing learning and behavior disorders. EPA New England has developed many initiatives to help residents and the regulated community prevent and reduce childhood lead poisoning, including:

- “Keep It Clean,” a campaign informing “do-it-yourself” home renovators about the risk of lead poisoning in children and adults during the renovation and repainting of older homes.
- A Lead Safe Renovation interactive CD-ROM designed to meet federal training requirements for renovators and, “IMPACT”, an interactive lead awareness training course on lead safe renovation for high schools and vocational and technical colleges.
- “First Steps Day Care Provider Training” manuals, videos and CD-ROM available in English, Spanish, and a specially-designed Native American version, which explain the importance of blood lead screening, a healthful diet and basic preventive steps.
- “English as a Second Language-A Curriculum for Urban Living,” was designed for adult education and other students whose primary language is not English and includes a major emphasis on lead poisoning prevention.
- “Community-Based Environmental and Lead Assessment and Educational Demonstration Program” which provides information to residents about lead in soil and low cost landscaping techniques for minimizing lead exposure.

For more information on lead safety, call EPA's lead hotline at 1-800-424-LEAD (1-800-424-5323) or EPA New England at 1-800-252-3402

Figure 3. Vehicle Emissions Decrease & Vehicle Use and Population Increase in New England



sources: U.S. Bureau of the Census and U.S. Federal Highway Administration

weight. That's why we've focused so much attention on air quality in schools. For the past five years, EPA New England has distributed thousands of our popular “Indoor Air Quality Tools for Schools” Action Kits to help school officials improve their indoor air quality. Last year we trained hundreds of school officials—including 300 in Massachusetts alone—and more than 100 schools in the region implemented air quality management plans.

Asthma is one of the most serious environmental health issues facing New Englanders today, particularly among our children where it is the leading cause of chronic illness. One-third of all pediatric emergency room visits are due to asthma. The problem is especially severe in large urban cities where there are higher concentrations of low-quality housing and air pollution. In Boston's Roxbury neighborhood, for example, an estimated 15 to 20 percent of teenagers are affected by asthma, five times the state average.

1972

Federal Environmental Pesticide Control Act requires manufacturers to provide toxicological information and register pesticides with EPA.

1973

Endangered Species Act establishes procedures for listing species as endangered or threatened, and requiring that federal agencies do not initiate or proceed with projects that “jeopardize the continued existence” of such species.



1972

EPA Provides Water and Wastewater Infrastructure for Tribal Housing in tandem with HUD and EDA.

1973

EPA Begins Ban To Phase Out Lead in Gasoline, resulting in 98% reduction in lead levels in air, and helping to reduce blood lead levels in children by 75%.

EPA New England has been very active on this issue. We are working with community-based coalitions in Lowell, Hartford, Boston and a half-dozen other cities to reduce asthma through “Healthy Homes” assessments and other outreach efforts. We’ve joined with the Physicians for Social Responsibility to create a curriculum for primary care physicians on environmental asthma triggers. And, in coordination with three Boston-area universities, we’ve launched a pilot project to study nine asthmatic families living in Boston public housing to evaluate the causes of the asthma and the barriers and benefits to intervention.

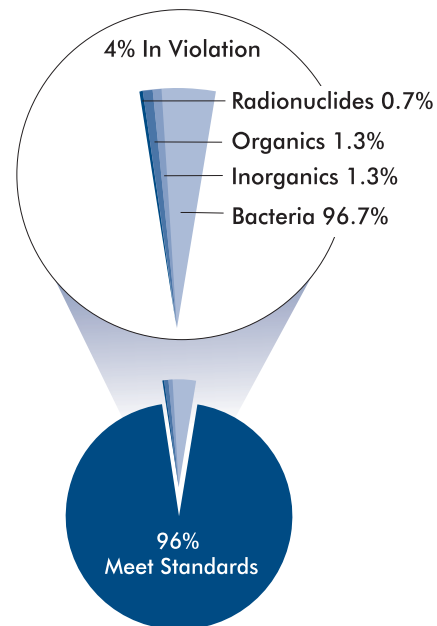
Drinking Water Protection

Drinking water supplies in New England are safer now than they’ve ever been (Figure 4). Currently, 96 percent of the region’s 12,000 public water supply systems are meeting drinking water quality standards, up from 94 percent a year ago. Our success in this area is a direct result of the Safe Drinking Water Act (SDWA), which promotes a “multiple barrier” water protection approach combining source water protection, filtration, chemical disinfection and distribution systems safeguards.

EPA New England has been very aggressive in making sure that all of these protection measures are being utilized. For example, we provided \$66 million last year to help New England communities fund improvements in drinking water treatment and distribution systems. We’ve also used our enforcement “stick” when we’ve had to. In fact, two of the Agency’s biggest ongoing battles evolve around drinking water: our lawsuit to force the Massachusetts Water Resources Authority to provide drinking water filtration for two million Boston-area residents and our enforcement orders halting military training at the Massachusetts Military Reservation on Cape Cod due to groundwater protection concerns.

Among our newer priorities is the Source Water Protection Program designed to ensure the long-term protection of water supplies. A new requirement under the SDWA, the source water protection program requires all suppliers, in

Figure 4. New England Public Water Systems Meeting Drinking Water Quality Standards



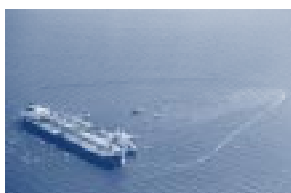
source: EPA Safe Drinking Water Information System, 1999

cooperation with the states, to identify and assess potential contamination threats to their drinking water supplies. As these assessments are completed, states, suppliers and citizens will work on ways to better protect those drinking water supplies.

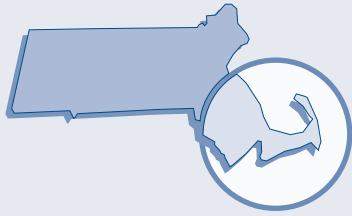
We’re also working closely with businesses and teachers to heighten their awareness about drinking water. For businesses, we’ve launched an awards program to recognize those that have voluntarily worked to protect drinking

1973
Energy Crisis Grips the World,
exacerbated by an oil embargo by
Arab nations.

1974
**First National Standards Limiting
Industrial Water Pollution Set By EPA**



December 1974
Safe Drinking Water Act—EPA begins setting
health-based standards and physical/chemical
treatment requirements for drinking water.



Fighting for Cape Cod's Drinking Water

Protecting Cape Cod's drinking water continues to be one of our biggest battles. The Massachusetts Military Reservation (MMR), a 22,000-acre property that has been used for military training activities since 1911, is located over a sole source aquifer that provides drinking water for 200,000 year-round and 500,000 seasonal residents of Cape Cod. Parts of the aquifer have been contaminated by fuel spills and other past practices at MMR's Otis Air Force Base. Otis is currently being cleaned up as a Superfund site.

Fearful that military training was causing even more damage to the groundwater, EPA New England in May 1997 suspended military training at Camp Edwards, including all use of live explosives, propellants, flares and lead bullets. It was the first time in our country's history that military training activities had been halted due to environmental and public health concerns. That same year, we ordered a series of groundwater studies that have produced evidence of serious groundwater and soil contamination.

As a result of these studies, EPA this year ordered the military to begin the process for the removal of unexploded ordinance from the base and to clean up contaminated groundwater and soils (available at: www.epa.gov/region1). The order, the first of its kind in the country, was issued under emergency provisions of the Safe Drinking Water Act. The federal law is specifically designed to protect underground drinking water supplies such as Cape Cod's aquifer.

water supplies. This year, we'll also be distributing flyers to businesses to highlight the importance of drinking water protection and provide examples of best management practices. We've also developed a groundwater curriculum for schools and an awards program for teachers who are doing exemplary work.

Last year was also the first year in which drinking water consumers all across the country received Consumer Confidence Reports from their community water suppliers. These easy-to-read reports tell consumers about the source of their water, the distribution system and compliance with drinking water rules. Consumers can expect to receive these reports in the mail every year, with the next reports due out by July 1, 2000.

Pesticides and Public Health Protection

Pesticides are widely used to control bacteria, bugs and other pests that can damage agricultural crops. At the same time, pesticides pose potential threats to human health, and in the environment can damage the fragile balance of our ecosystems.

EPA has placed a special emphasis on protecting our children from pesticides. A major milestone in this regard was working on, winning, and implementing the Food Quality Protection Act (FQPA) of 1996 that for the first time puts emphasis on protecting the health of infants and children from pesticide risks.

The FQPA paved the way for new regulations to better ensure that pesticides are used in ways that are more sensitive to human health and our ecosystems. In concert with those efforts, EPA has launched a Reduced Risk Initiative which encourages manufacturers to develop alternative pesticides that pose less risk to human health and to encourage farmers and others who use pesticides to find safer alternatives.

Implementation of the Food Quality Protection Act has already resulted in cancellation of some pesticide products and implementation of new restrictions on other pesticides.

1975

Energy Policy and Conservation Act includes provision establishing fuel economy standards for passenger cars and trucks in the U.S.

1976

The Argo Merchant Runs Aground off Nantucket, spilling 7.6 million gallons of oil.



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1975

Car Makers Begin Installing Catalytic Converters In New Vehicles to meet EPA emission standards.



1976

Resource Conservation Recovery Act (RCRA) mandates cradle-to-grave regulation of hazardous waste.

New England's unique geology has resulted in some of the highest radon concentrations in the country.

Last year also was marked by the first-time distribution of an EPA *Pesticides and Food Consumer Right-To-Know* brochure, which was widely distributed in large supermarkets. The brochure is available on EPA's website at: www.epa.gov/pesticides/food

In the year ahead, we will continue our efforts to encourage manufacturers to develop pesticides with reduced risks to the public. We will do this by speeding up the registration process for certain pesticides and through other incentives. As part of our effort to make sure pesticides are adequately controlled and studied, we will also focus on better consumer labeling, children's health affects and developing new groundwater protection rules.

A Comprehensive Approach to Radon

Radon is a serious public health issue, particularly in New England. Radon is a colorless, odorless radioactive gas that comes from the natural radioactive breakdown of uranium in the ground. It can seep into basements and accumulate in indoor air. It can also be found in groundwater. When radon-containing groundwater is used for showers and other domestic purposes, the material is released to the air, potentially contributing to the risk of lung and stomach cancer.

Breathing radon in indoor air is the second leading cause of lung cancer in the United States, causing about 20,000 cases a year. Radon in drinking water is far less significant, causing an estimated 168 cancer deaths a year.

How do I get more information about radon?

Questions about radon in air can be answered by calling EPA New England (1-888-EPA-7341), the Radon Hotline (1-800-SOS-RADON), or the New England state programs. The website www.epa.gov/iaq/radon also has valuable information. For information on radon in groundwater, contact the Safe Drinking Water Hotline (1-800-426-4791) and EPA's Office of Drinking and Ground Water Internet site at:

www.epa.gov/safewater/radon.html

New England State Radon Programs

Connecticut	(860)509-7367
Maine	(800)232-0842
Rhode Island	(401)222-2438
Vermont	(800)439-8550
Massachusetts	(413)586-7525
.....	and(800)RADON95
New Hampshire	(800)852-3345
.....	ext.4674

New England's unique geology has resulted in some of the highest radon concentrations in the country. About one in four New England homes has indoor radon levels above the recommended action level of 4 pCi/l. In addition, almost half of the region's population gets its drinking water from groundwater.

EPA has taken a comprehensive approach to reducing radon risk. Because the risk from radon in indoor air is so much greater, the Agency's new proposed radon standards for drinking water encourage states and communities to address radon in indoor air before pursuing expensive strategies to reduce radon in drinking water. EPA New England will also continue to support the state radon and drinking water programs with technical assistance and financial grants.

October 12, 1976
Toxic Substances Control Act sets stage for EPA's ban that will phase out production and use of cancer-causing PCBs.

August 1978
Love Canal in New York Found to be Contaminated by buried leaking chemical containers.

March 28, 1979
Accident at Three Mile Island Nuclear Power Plant in Pennsylvania

1977
First Sign of Improvement in Waters As Dischargers Comply With NPDES Permit Requirements



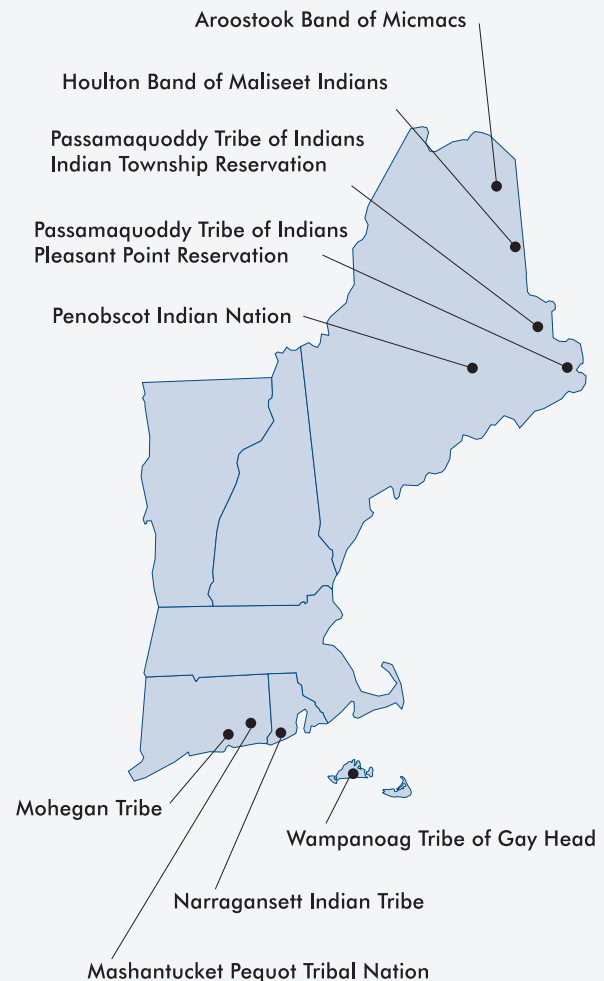
1978
EPA & Other Federal Agencies Ban Use of Chlorofluorocarbons (CFCs) as a propellant in most aerosol cans.

new england tribes

EPA New England and the nine sovereign Tribes in the region have forged close relationships, resulting in enhanced environmental protection on tribal lands and better cooperation on issues that cross boundaries. Among the highlights of this improved partnership was the New England Tribes and 13 federal natural resource agencies in the region signing a Memorandum of Understanding last year in which they agreed to work as equal partners in protecting the Tribes' natural resources. EPA New England's Emergency Response Team was also the first in the nation to bring Tribal members into response team operations.

Many of the collaborations between EPA and the Tribes are focused on public health and ecosystem protection. In what will provide the first regional, centralized look at air quality on Tribal lands, EPA is providing funds for Tribes to deploy air monitoring equipment in Maine and on Martha's Vineyard to collect and analyze mercury, acid rain and particulate matter data. EPA is also collaborating with the Passamaquoddy and Penobscot Tribes to study liver tissue in moose and deer to monitor toxics accumulation in subsistence game. A pilot mercury project with EPA and the Wampanoag and Passamaquoddy Tribes has also been launched to collect fish tissue to determine the health risks to Tribal members from eating fish. EPA is also assisting the Bureau of Indian Affairs with a multi-partner collaborative study to evaluate if dioxin, furans, and PCBs in the Penobscot River pose public health and environmental risks.

Recognizing that environmental protection of Tribal trust natural resources is critical for protecting each Tribes' traditions, culture and history, EPA will continue to provide increased funding for these and other protection efforts. Last year EPA New England provided \$2.3 million in funds to assist the Tribes in these activities.



1981
Interagency Task Force on Acid Precipitation reports acid rain problem is intensifying in Northeast part of U.S. and Canada.

1982
Nuclear Waste Policy Act to provide long-term, safe disposal of the most dangerous radioactive waste from nuclear power plants and weapon production.

1980's

1980
Comprehensive Environmental Response, Compensation and Liability Act, referred to as Superfund, establishes a national program for toxic waste cleanups and requires EPA to establish lists of hazardous substances and the most hazardous toxic sites in the U.S.



1983
Superfund Issues First National Priorities List (NPL) – 406 sites nationwide, 38 in New England.

new england's ecosystems



Photo: Steve Delaney

New England's ecosystems are our most valuable natural assets. The richness of our waterways provides opportunities to see remarkable creatures such as bald eagles, striped bass and humpback whales. The northern forest provides habitat for bear, moose and hundreds of species of birds. And, of course, many of our ecosystems are prized for recreational and commercial activities.

But human activities can also significantly alter environmental conditions for better or worse. By taking a look at the condition of our waters, wetlands, air quality and species of interest, we can see the progress we've made in protecting our ecosystems after 30 years and the challenges that remain.

Aquatic Ecosystems

In 1970, many of our rivers, estuaries and harbors were environmental nightmares. Sewage and industrial wastes transformed our waterways into waste dumps with almost no life at all, except perhaps noxious algae blooms. Rivers ran red, blue, or green depending on what dyes were used by mills upstream. Our region's largest river, the Connecticut, was openly referred to as a "landscaped sewer." It was no wonder many New England cities and towns turned their backs on their rivers and harbor fronts, paving them over or walling them from view.

Thanks to federal initiatives such as the Clean Water Act, water quality is much improved. As we see the dramatic results of our investments in pollution controls and sewage treatment, we are rediscovering our rivers and waterfronts. Witness the hugely popular Waterfire events during the summer on Providence's Woonasquatucket River—a river that was once mostly paved over in the city—or canoeists on the Connecticut, no longer a sewer, but home to bald eagles and a small, but rising, stock of wild salmon.

But new pollution challenges lie ahead. In the 1970s, wastewater treatment plants and other "point" sources comprised nearly 50 percent of the identified sources of pollution. Today that figure is less than 20 percent. This explains why we are focusing substantially more attention now on controlling nonpoint pollution sources such as stormwater, failing septic systems and atmospheric deposition (Figure 5).

Eutrophication – The Big Challenge

The biggest problem today for many New England water bodies is not toxic chemicals, but high amounts of phosphorus and nitrogen coming from runoff from over-fertilized lawns and farms, municipal discharges, failing septic systems and atmospheric deposition. These nutrients "over-feed" our waters, accelerating an aging process, known as eutrophication, that normally takes hundreds or thousands of years. Increased levels of nutrients cause high growth of unwanted algae and other aquatic plants. Such overgrowth creates odor and visibility problems, clogs waterways and—as it dies and decomposes—uses up oxygen in the water.

Figure 5. Water Quality Conditions in New England

(Reported As Percent of Assessed Waters)

Supports Designated Uses	Rivers/Streams (mi.)	Lakes/Ponds (acres)	Estuaries (sq.mi.)
Healthy Aquatic Life	96%	89%	97%
Swimming	96%	96%	97%
Fish Consumption	17%*	15%*	17%*
Shellfish Consumption	—	—	79%

*primarily due to statewide mercury advisories

Leading Sources of Pollution	1970s	Municipal Point Sources Industrial Point Sources	▶	1990s	Urban Runoff/Storm Sewers Industrial Point Sources Hydromodification
Leading Types of Pollution	1970s	Pathogens Toxic Chemicals Nutrients/Low Dissolved Oxygen	▶	1990s	Pathogens Low Dissolved Oxygen Nutrients, Metals, Flow Alteration

sources: State CWA§305(b) Water Quality Inventory Reports, ASIWPCA, America's Clean Water, 1983

1983

U.S. vs. A.C. Lawrence Leather Co. of Winchester, NH is one of the first criminal enforcement cases for Clean Water Act and Resource Conservation and Recovery Act violations.

1984

Amendments to the Resource Conservation and Recovery Act establish the Underground Storage Tank Program and RCRA Corrective Action Program.



1985

Giant Hole in Earth's Protective Atmospheric Ozone Layer over Antarctica is reported by British scientists.

1984

Union Carbide Plant in Bhopal, India Releases Methyl Isocyanate killing more than 2000 people.

This leads to low oxygen levels in water and poor habitat that sensitive fish species cannot tolerate. Currently, 31 percent of New England's lakes and ponds are eutrophied.

Phosphorus is the chief cause of eutrophication in most New England lakes and streams while nitrogen is the main contributor in estuaries and coastal areas such as Long Island Sound. In the summer, rivers usually have lower water levels due to less rainfall. This, along with higher summer temperatures and high phosphorus levels, create optimal conditions for algae and nuisance plants to thrive. In the past, to control the discharge of phosphorus from wastewater treatment plants, permits have included limits of one milligram per liter (mg/l). Now limits lower than 1 mg/l are being explored and implemented, where necessary.

EPA, states and tribes are studying many impaired rivers and lakes to determine the amount of nutrients and other pollutants they can handle from point and nonpoint sources before they become unhealthy. The results—known as Total Maximum Daily Loads (TMDLs)—will be used in issuing future permits for wastewater treatment plants and other point-source dischargers, as well as in controlling nonpoint pollution sources.

Managing Stormwater

Urban stormwater continues to be a major source of water pollution in New England. When it rains, oil, grease and other contaminants from roadways and parking lots wash into storm drains which lead directly to rivers and estuaries. Last fall, EPA finalized new regulations requiring cities and construction sites to implement stormwater management plans to minimize pollution to waterways. The regulations will require cities to include such measures as regular street sweeping, ensuring that sewers are not connected to storm drains and educating residents to refrain from dumping oil and other pollutants into storm drains.

Stormwater runoff is a major pollution source in non-urban areas as well. EPA New England and our partners are working closely with agricultural, forestry and local communities to establish Best Management Practices (BMPs) to eliminate nutrients and toxic substances in stormwater runoff.



December 1985

— **EPA and U.S. Department of Justice file lawsuit against the State of Massachusetts** for illegal discharges of sewage into Boston Harbor.

Restoring Tidal Wetlands

Tidal wetlands have a critical role in New England's environment, providing important habitat and nurseries for birds and fish and improving water quality by filtering out pollutants and sediment. Coastal salt marshes are among the most biologically productive ecosystems in the world, rivaling tropical rainforests in the amount of plant material produced each year.

For many decades, the importance of tidal wetlands was unappreciated or not understood. As a result, thousands of acres of tidal marshes in New England were filled for development, used for garbage disposal, or drained to control mosquito populations. Laws passed in the early 1970s halted large-scale loss of tidal marshes by requiring permits for activities in these areas.

Restoring degraded tidal wetlands is another priority in New England. The Connecticut Department of Environmental Protection has won national recognition for helping to restore more than 1,500 acres of tidal wetlands since 1980. Similar efforts are underway in Massachusetts—among those, a state/federal/local partnership to restore 100 acres of salt marsh in Rumney Marsh north of Boston. Massachusetts also has launched an innovative wetlands restoration and banking program involving public agencies and major corporations, such as Gillette.

Losing freshwater wetlands due to activities not reported through permitting programs remains a major concern. According to the U.S. Fish and Wildlife Service, one acre of wetlands can filter toxins, sediment and other pollutants from 7.3 million gallons of water runoff annually. New England states estimate that up to 250 acres of wetlands per state are being lost or altered each year. Efforts to eliminate wetland loss and restore this valuable ecosystem will become increasingly important in the face of continuing population growth and development pressure.

The National Estuary Program

When the National Estuary Program (NEP) was established by Congress in 1985, three of the original four estuaries

1985

EPA's National Estuary Program lists Long Island Sound, Buzzards Bay and Narragansett Bay among first estuaries in country.

1986

Emergency Planning and Community Right-to-Know Act requires states to designate emergency planning districts and industries to retain safety data sheets for hazardous substances and report releases of hazardous substances.

1986

Superfund Amendments and Reauthorization Act (SARA) creates mechanisms to speed cleanups.



The Kennebec River:

Removing a Dam and Restoring a Fishery

The Edwards Dam on the Kennebec River in Augusta, Maine was breached last summer, allowing water to run freely on a 17-mile stretch of the river for the first time in 162 years. The breaching—and subsequent removal of the dam last fall—was the result of a precedent-setting decision by the Federal Energy Regulatory Commission (FERC) which found that the environmental benefits of removing the dam outweighed the economic benefits of re-licensing the dam. The dam's removal has already resulted in striped bass returning to this area of the river and, eventually, nearly a dozen migratory fish species are expected to return, including Atlantic salmon, shad, alewife and Atlantic and shortnose sturgeon. As fish populations rebound, other wildlife dependent on a healthy fishery will also benefit, including eagles and osprey.

The removal of the dam culminated a decade-long battle that began with the formation of the Kennebec Coalition, which includes groups such as American Rivers, the Atlantic Salmon Federation, the Natural Resources Council of Maine, Trout Unlimited and its Kennebec Valley Chapter. State and federal agencies, including EPA New England, joined the coalition in calling on FERC to take whatever action was necessary, including the dam's removal, to restore historic fish populations to the Kennebec above the dam. Before the dam was built in 1837, the Kennebec River was home to the state's largest population of resident striped bass.

Popular Science magazine recognized the decommissioning of the dam with a 1999 "Best of What's New" award to the Kennebec Coalition and FERC.

targeted for attention were in New England — Long Island Sound, Narragansett Bay and Buzzards Bay. Since then, Casco Bay, Great Bay and Massachusetts Bays have been added. All of New England's estuaries face common environmental concerns such as habitat loss, pollution from nutrients, bacteria and toxic chemicals, and adverse impacts from increasing development.

Each of the NEP estuaries has a management plan for addressing these and other problems unique to their areas. In

Narragansett Bay, for example, the NEP kick-started a program to stop the discharge of boater waste (treated and untreated) into the bay, which resulted in designation of all Rhode Island marine waters as a "No-Discharge" area. In Buzzards Bay, the estuary program is tackling the nitrogen pollution problem head-on, resulting in more than 4,000 acres of shellfish beds being reopened. Efforts also are underway for Buzzards Bay to become a No-Discharge area. In Long Island Sound, the NEP has focused major attention on upgrading wastewater treatment plants to reduce nitrogen inputs.

Contaminated Sediments

While we've worked successfully over the past 30 years to reduce pollutant discharges into our waters, bottom sediments in many areas continue to show the ill effects of contamination. Nutrients, PCBs, mercury and other heavy metals are among the substances that bottom sediments store and eventually release into the environment through natural decay, heavy rains or uptake by bottom feeding organisms. EPA's National Sediment Inventory shows that sediment contamination is widespread in many New England watersheds. About 40 percent of southern New England's small coastal estuaries have bottom-dwelling organisms impacted by sediment contamination.

On a positive note, however, federal assessments of contaminant concentrations in New England mussels show that levels of PCBs, copper and the pesticide chlordane are declining. One estuary, Boston Harbor, has seen a 20-fold drop in hydrocarbon levels in mussels and a 10-fold drop in PCB levels in flounder in just the past 10 years.

Air Quality's Influence

New England's terrestrial and aquatic ecosystems are greatly influenced by the air that passes over the region. Pollutants deposited on our land and water can disrupt chemical balances, making trees more susceptible to disease and insect infestation. Acid precipitation can increase the acidity of rivers and lakes, making them uninhabitable for desirable species of fish. Higher acidity also increases the likelihood of high levels of dissolved metals in our waters which, in

April 26, 1986

Chernobyl Nuclear Power Plant Blows Up, causing thousands of deaths, large scale evacuation and significant long-term effects on surrounding environment.



1987

Clean Water Act requires states to upgrade state water quality standards and focus attention on nonpoint source pollution.

1986

Safe Drinking Water Act Amended to promote protection through Well Head Protection Program.

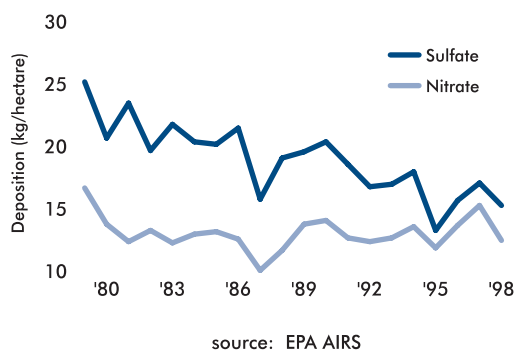
1986

Asbestos Hazard Emergency Response Act (AHERA) to protect school children and employees from exposure to asbestos in school buildings.

1987

Montreal Protocol, signed by U.S. and 23 other nations, pushes for phase out of production of CFCs.

Figure 6. Atmospheric Deposition in New England
1979 - 1998



turn, can enter the food web of fish, wildlife and people. “Greenhouse” gases and particulate matter in the atmosphere also play a role in long term changes in New England’s climate.

Acid rain first came to light as a problem in the late 1970s and is still a major concern for New England. The primary sources of acid rain are sulfur dioxide and nitrogen oxide from coal-fired power plants and other combustion sources, which precipitate as sulfate and nitrate (Figure 6). Reduced sulfur dioxide emissions have resulted in lower levels of acidity in New England rainfall and some recovery of fresh water lakes. Still, decades of acid rain have diminished our soil’s ability to neutralize acid, particularly in northern New England. We’ll need further reductions in acid rain for significant recovery of lakes and forests.

Many scientists also believe that atmospheric deposition is a primary source of mercury in New England waters. The impact of mercury deposition on our fish and wildlife populations is not yet known. Mercury concentrations in fish tissue prompted five of the six New England states to issue statewide fish consumption advisories, limiting fish

consumption for children and pregnant or nursing women. EPA, states, tribes, the Eastern Canadian Provinces and other partners are collaborating in studies and regulatory efforts to reduce mercury transport into our waters and ecosystems.

A Clear View

One of EPA’s air pollution goals is to preserve the air quality—in particular, visibility—in our national parks. Without pollution, the natural visual range in the eastern United States is 90 miles. But over the years, air pollution has reduced that range to between 14 and 24 miles. Last spring, EPA announced a program to tackle the haze problem, with a goal of restoring clear skies to 156 national parks and wilderness areas across the country, including the Presidential Range in New Hampshire, Acadia National Park in Maine and the Lye Brook Wilderness Area in Vermont.

Birds & the Environment

Birds are excellent environmental indicators, providing us with a long-term perspective about the health of our ecosystems. With the increase in development in New England, birds that are well adapted to living with humans, such as grackles and starlings, seem to be stable in their abundance. However, birds requiring meadows, shrubland and other grassy open areas are dropping in numbers—among those, bobolinks and meadowlarks. The dramatic reforestation of New England’s landscape, after the nearly complete deforestation by agriculture and timber production in the 19th and early 20th centuries, is bringing back a large number of woodland birds such as owls and woodpeckers (Figure 7).

Neotropical migratory birds such as warblers, cuckoos, vireos and hawks are under severe stress, both in New England and other North American breeding grounds and in their Latin American wintering grounds. Many neotropical migrant species, including warblers and flycatchers, have declined dramatically over the last two decades. Twenty-two species that breed in New England and then fly to Central and South America for the winter have suffered population drops due to fragmentation and loss of forest and grassland habitat, pesticide poisoning, predation, adverse land use practices and habitat changes along migratory routes.

September 1988
**EPA & U.S. Surgeon General
Urge Homeowners to Test for
Radon**



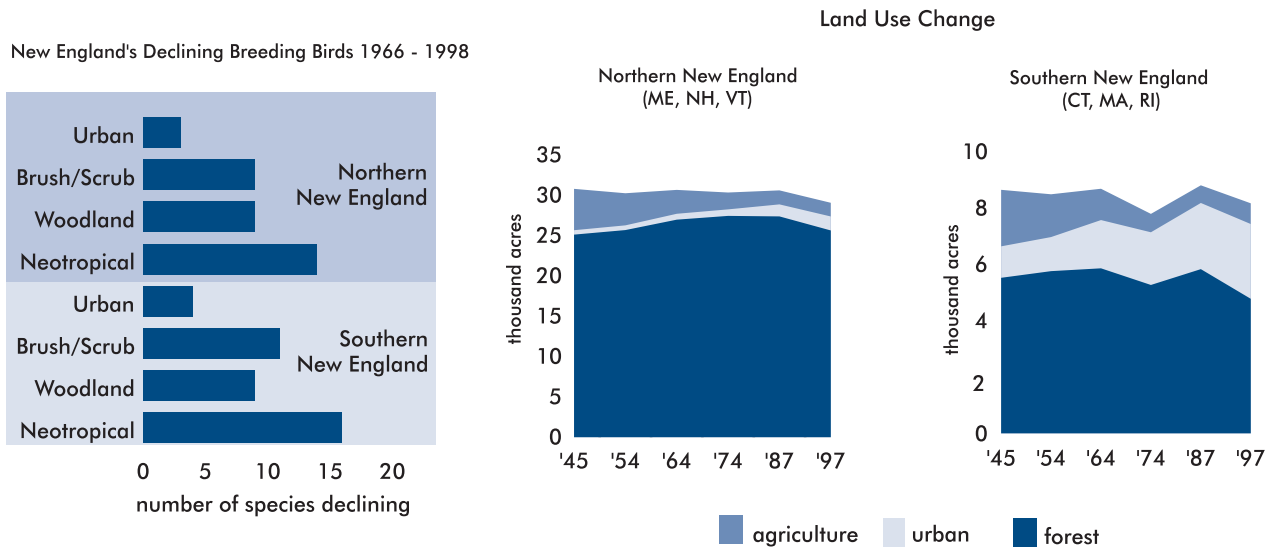
1988
• • **100th Emergency Removal Action**
completed in New England.

May 1988
First National Volunteer Monitoring Conference
held at University of Rhode Island. Today, there are more than 20,000 volunteers monitoring New England’s waters.

March 24, 1989
Exxon Valdez Spills almost 11 million gallons of crude oil into Alaska’s Prince William Sound. • •



Figure 7. Birds as Indicators of Land Use Change



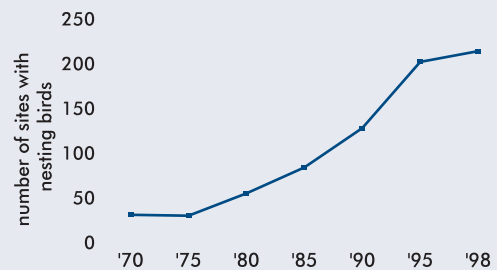
sources: USGS-BRD, Pawtuxet Wildlife Research Station, Breeding Bird Survey, ERS - USDA Major Land Use Database

(Based on over 31.5 mil. acres in Northern New England and 8.8 mil. acres in Southern New England. The difference between total acreage and the sum of these 3 uses is other types of land use.)

Bald Eagle: A Cautious Success Story

When Europeans first arrived in North America, there were approximately 100,000 bald eagles living in what was to become the lower 48 states. By 1967, the population had plummeted to less than 500 breeding pairs. This was due to habitat loss and the effects of the pesticide DDT in the fish that eagles were eating, which caused eggshell thinning. In 1972, DDT was banned and habitat conservation efforts were launched. Bald eagle populations have since rebounded to a current level of 5,748 breeding pairs and continue to improve in the lower 48 states. In New England, there are currently 215 known nesting sites. Although proposed for removal from the federal Endangered Species List, bald eagles remain vulnerable to contaminants in the food chain and to habitat loss.

Bald Eagle Nesting in New England 1970-1998



source: USFWS, 1999

1989

The World Prodigy runs aground off Newport, Rhode Island, spilling 420,000 gallons of oil.

1990

National Environmental Education Act makes EPA the lead federal agency for promoting, supporting & encouraging environmental education.

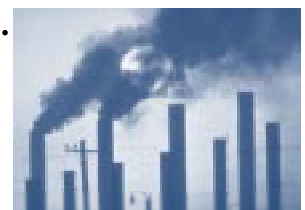
1990's

1989

Toxics Release Inventory is available, allowing public to know the location and nature of toxic chemical releases from specific industrial facilities in communities.

1990

Pollution Prevention Act encourages industry to reduce toxic emissions through cost-effective changes in production.



creating healthy communities



Photo: Jon Britt

As we look back on what we've accomplished over the past 30 years, we have come to realize that we need to bring our environmental protection efforts closer to home. We now recognize that preserving the environment isn't simply about protecting a beautiful far away place such as a forest or a beach. It is about enhancing our communities—the places where we live and raise our families.

Over the past five years, EPA New England has been a national leader in finding new ways to give our communities the tools they need to address the environmental and public health problems that threaten them. And the benefits are being felt in all corners of the region, from Burlington, VT and Bridgeport, CT to Providence, RI and Presque Isle, ME.

Revitalizing our Urban Neighborhoods

Residents in urban areas throughout New England are exposed to a disproportionate share of environmental and public health hazards, ranging from asthma and lead poisoning to air toxics and contaminated industrial sites. The effects of these hazards are further compounded by limited economic development opportunities, social ills and, often, little political power. In 1995, EPA New England launched a pilot program, the Urban Environmental Initiative (UEI), to tackle the complex challenge of making environmental and public health improvements in our urban cities.

The UEI program is all about community-based environmental protection. Focusing on neighborhoods in Boston, Hartford and Providence, the UEI team has made public involvement the foundation of its efforts to help community partners build their capacity for solving their own environmental problems. Some of UEI's urban environment and public health projects include:

- In Providence, which has among the highest lead poisoning rates in the country, we've tested more than 100 vacant lots for lead contamination. The sampling effort is being coordinated with a city program to sell vacant lots to neighborhood residents for \$1.

- In Boston, we've helped launch an award-winning program in Dorchester that trains local youths in lead testing and abatement for residential properties, thus providing both environmental improvements and job training. We're also helping to restore waterfront properties on Chelsea Creek in East Boston and Chelsea.

- In Hartford, we've trained community educators on lead poisoning and asthma prevention, efforts that have reached thousands of children and their parents.

To obtain more information about UEI, visit our web site: www.epa.gov/region01/eco/uei

Brownfields

All across New England abandoned industrial sites plague our cities and towns and hinder revitalization. For years and sometimes decades, these Brownfield properties have sat dormant due to fears of environmental contamination and the potential costs of cleaning the sites up.

EPA's Brownfields Program is reversing this trend, benefiting both our cities and our rural areas which are scrambling to protect precious open space. Through grants, site evaluations and other assistance, EPA New England has helped

Protecting Neighborhoods Near Logan Airport

Residents of Chelsea, East Boston, Somerville, Winthrop and Roxbury know all too well what it is like living near Logan Airport. Hour after hour, day after day, year after year, the airport generates noise, traffic congestion and compromised air quality. Last year, EPA New England set an important precedent by opposing construction of a new runway at Logan largely on the grounds that it would, once again, unfairly and disproportionately burden neighboring communities.

Citing environmental justice issues, we told the Federal Aviation Administration that communities around Logan should not be asked to accept the impacts of further expansion unless and until Massport, the airport's operator, takes specific steps. In particular, we asked Massport to reduce noise and traffic impacts from the airport's current operations and to work harder to shift more of Logan's customer base to regional airports and rail alternatives.

EPA's strong opposition to the runway played a major role in the FAA's decision in January to delay any approval of the runway. As a result of that decision, Massport will be required to do additional environmental studies on whether and how a new runway can be built without placing an unfair burden on Boston's neighborhoods.

1990

The World's Largest Oil Spill is Caused during the Gulf War when five tankers and hundreds of storage tanks and oil wells are blown up in Kuwait by Iraq, releasing a total of 294 million gallons of crude oil.

1990

Merrimack River Watershed Initiative is launched, using National Estuary Program as a model.

1990

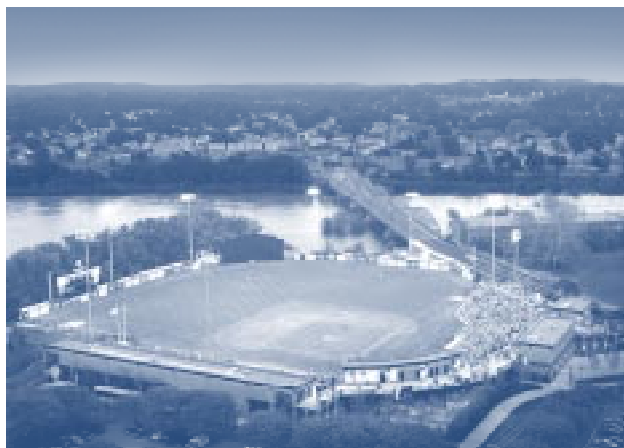
The Ocean Liner *Bermuda Star* and Barge *Bouchard* run aground off Falmouth, MA in • • • separate incidents, spilling a total of 107,000 gallons of oil.



November 15, 1990

Clean Air Act Amended, with major new programs addressing smog, acid rain and air toxics.

clean up dozens of contaminated properties, resulting in thousands of new jobs and millions of dollars of tax revenues for municipal coffers. Since the start of the program in 1995, nearly \$30 million in federal funds has been invested in identifying, investigating and cleaning up these properties in New England.



Much of the Brownfields redevelopment has been in the cities that need the most help. In Bridgeport, CT and Lowell, MA, residents are flocking downtown to see the Bridgeport Bluefish and Lowell Spinners minor-league baseball teams play in stadiums built on former Brownfield sites. At both locations, EPA grants were used to evaluate the sites for contamination. In Warwick, RI, the T.H. Bayliss site was assessed with EPA funds, leading to a decision to use the property for a new intermodal rail station linked to T.F. Green Airport. And in Stamford, CT, the city recently issued the first low-interest loan of its kind in the country—a loan made possible from an EPA grant—that will help a developer clean up a property along Long Island Sound for new housing and a waterfront walkway.

Wrestling with MTBE Pollution

MTBE (methyl tertiary butyl ether), a compound used in reformulated gasoline (RFG), has been found at low levels in about 15 percent of the drinking water wells tested in New England. Although the air quality benefits of using reformulated gasoline have been significant – a 35 percent reduction of air toxics and up to a 20 percent reduction in smog-forming pollutants—MTBE is about 30 times more

Underground Storage Tanks in New England: A Success Story

New England has been a national leader in complying with federal regulations requiring that underground storage tanks (USTs) be upgraded, removed or replaced to prevent leaks and spills. All six of the New England states have compliance rates exceeding 90 percent. Maine, Vermont, New Hampshire and Rhode Island lead the pack at 97 percent compliance or better. The compliance push has resulted in nearly 70,000 USTs being closed in the region since 1986 when the UST program began. The 38,000 tanks still in service are state-of-the-art, leak-resistant tanks.



..... 1991

First Completed Construction of Cleanup Remedy at an NPL site in New England—
Cannons Engineering, Bridgewater, MA.

1992

Ban on Dumping of Sewage Sludge
into ocean and coastal waters.

.....

1991

EPA Coordinates Use of Recycled and Recyclable Products by Federal Agencies where possible.

1992

United Nations Earth Summit Conference on Environment and Development in Rio de Janeiro, Brazil.



Getting to Yes: The Pine Street Barge Canal Superfund Site Agreement

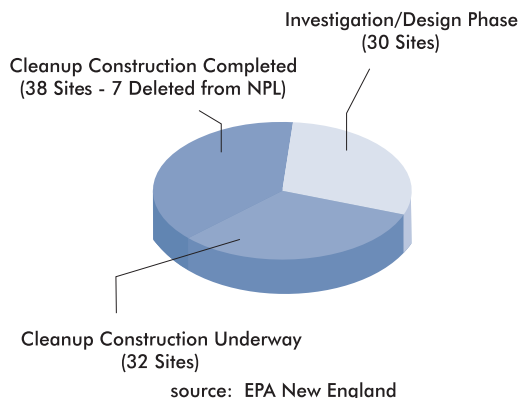
"This agreement proves that communities can play a crucial role in solving these difficult issues and that the federal government is willing to listen." — Vermont Governor Howard Dean

Last fall, EPA New England finalized a first-of-its-kind agreement with 23 parties responsible for contamination at the Pine Street Barge Canal Superfund site in Burlington, VT. Crafted by a first-in-the-nation citizen council, the \$7.3 million agreement addresses environmental risks to Lake Champlain, provides for projects to compensate for past resource damages and allows for commercial redevelopment of the site.

The agreement came six years after EPA withdrew its original \$50 million cleanup proposal due to local opposition and initiated a consensus-building process. Together, we developed a cleanup strategy that both protects the environment and is acceptable to the community. The responsible parties collectively agreed to participate in cleaning up the site and undertake a wetland enhancement project at a nearby farm. They also agreed to voluntarily spend up to \$3 million on additional environmental projects in the Burlington area.

Progress in Superfund Site Cleanups

Today, there are more than 1,200 Superfund sites on EPA's National Priorities List (NPL) nationwide, 100 of which are in New England. Study or cleanup is underway at all of these sites. At 38 of the 100 sites, EPA has completed all construction associated with the cleanup.



Raymark: Turning a Superfund Site into a Wal-Mart

"Redevelopment initiatives have become a chief goal of Superfund cleanups and now the Raymark site is a shining star of those efforts." — Editorial in The Connecticut Post

The former Raymark waste site in Stratford, CT will soon be a linchpin of the local economy thanks to an EPA cleanup that is being touted as a national model. EPA New England's Superfund team designed the cleanup from the very beginning to allow for retail redevelopment of the 34-acre property. Among the design features was incorporating pilings into the protective cap so that the site could support the weight of a shopping center.

This past January, three mega-retailers—Wal-Mart, Shaw's Supermarkets and the Home Depot—offered a winning bid of \$24 million for the commercially prime property adjacent to Interstate 95. The money will help offset the substantial cost of cleaning up the site. The retail complex will contribute up to 800 permanent jobs, \$1 million in local property taxes and \$4.5 million a year in retail sales taxes to Connecticut's economy. And, by building the shopping center in downtown Stratford instead of on the outskirts, sprawl has been avoided and open space preserved.

1992

Residential Lead-Based Paint Hazard Reduction Act directed EPA to promulgate regulations for lead based paint activities.

1993

Curbside Recycling Triples Recycling Rate for Nation's Trash from 7% in 1970 to nearly 22%



1993

EPA's Common Sense Initiative shifts from pollutant-by-pollutant regulatory approach to industry-by-industry approach to achieve better results in a more efficient cost-effective manner for businesses and taxpayers.

Using Enforcement to Protect Workers and Jobs

Protecting both worker safety and job stability, EPA New England negotiated an innovative settlement last year that requires Aerovox Inc. of New Bedford to address widespread PCB contamination problems at its manufacturing facility along the Acushnet River. The agreement required the company to take immediate actions to reduce employee exposure to PCBs, close and relocate its operation within 16 months, and undertake a comprehensive cleanup of its nine-acre property. In addition to protecting workers and the environment, the agreement helps preserve hundreds of jobs in the community. Aerovox has already begun relocating its operations to a new industrial park in the city. A groundbreaking ceremony was held in the summer of 1999.

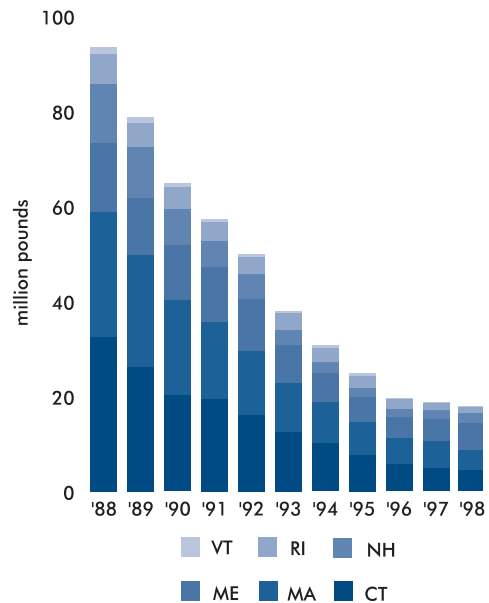
soluble in water than most other components of gasoline. Therefore, it moves through the groundwater at a very rapid rate. MTBE creates an unpleasant taste and smell in drinking water even at low levels, and is a possible human carcinogen. Sources of MTBE in drinking water wells are most likely to be gasoline releases from point sources such as pipelines and underground storage tanks or gasoline spills—including small spills of less than 10 gallons.

EPA is concerned about the detections of MTBE in drinking water and is moving aggressively to phase out the use of MTBE as an oxygenate in gasoline. In order to phase out the use of MTBE, Congress must modify current statutory requirements mandating a 2 percent oxygenate level in RFG, a requirement which has been met primarily through the addition of MTBE. EPA's goal is to protect public health and the environment by ensuring that Americans have both cleaner air and water—and never one at the expense of the other.

Keeping Track of Toxics

EPA is strongly committed to expanding the amount of environmental information available to citizens and communities. One of the first right-to-know programs at EPA is the Toxic Release Inventory (TRI) started in 1988. TRI requires facilities using or manufacturing any of 650 chemicals to report how much they released into the air, water or transfer waste offsite (Figure 8). This information is available in an electronically accessible national database at:

Figure 8. Trends in Toxic Releases
(Total to Land, Air and Water)



source: EPA Toxic Release Inventory

1994

First Completed Construction of the Remedy at a RCRA Site in New England— IBM, Essex Junction, VT



July 1995

Recovery of American Bald Eagle population allows upgrade from Endangered to Threatened Species

1994

Brownfields Program Launched to help communities revitalize abandoned, contaminated sites so they can be returned to productive use.

1994

List of Toxic Chemicals Reported to Public under Community Right-To-Know Laws doubles

October 1995

EPA New England Launches Charles River "Fishable & Swimmable by 2005" Program, Gives River Water Quality a Grade of D.

www.epa.gov/tri and is also being used by many groups to compile their own publicly available scorecards.

The TRI program has been hugely successful, spurring dramatic reductions in the use and discharge of toxics all across the country. From 1988 to 1998, TRI manufacturing facilities nationwide reduced their onsite and offsite environmental releases by 45.3 percent. Over the same period, New England manufacturers reduced their releases of toxics to the environment by 80 percent; decreases in air releases accounted for 90 percent of these reductions.

EPA has expanded the program several times to include additional chemicals and types of facilities that must report and, recently, seven “new sectors” began reporting to the TRI. A new class of TRI chemicals, known as persistent, bioaccumulative toxics (PBTs), was also added to the inventory. EPA is continuing to find more ways of giving people and communities the information they need to be informed about their environment and to be effective in protecting it.

Recycling Results

Twenty years ago, when less than 10 percent of the region’s trash was being recycled, most of our waste was being trucked to ever-scarce landfills and a spate of new incinerators which posed air pollution concerns. Today, New England states have some of the highest recycling rates in the nation—and they’re still going up. Most communities have achieved 25 percent recycling rates and some national role models in our region—the City of Worcester, for example—have reached over 50 percent. Over nine million people in New England recycle their trash.

EPA New England is working to further expand the frontiers of recycling so that electronic products (computers, monitors and televisions), construction debris, food waste and other materials can also be diverted from landfills and incinerators. Over the past four years, these efforts in creating new markets have resulted in more than 200,000 tons of recyclable materials being recovered and 200 new jobs being created.

We are also promoting a new concept in waste management called Pay-As-You-Throw. Under this new system, trash collectors (typically towns or cities) charge customers according to each bag of trash that they generate. This encourages residents to recycle more and throw away less. The boost in recycled materials also boosts revenues, which can result in lower property taxes that pay for trash collection. EPA’s national goal is to reach a 35 percent recycling rate by 2005. That would mean reducing the amount of trash generated to 4.3 pounds per person per day. By implementing new recycling incentives and supporting and expanding recycling markets, New England is well on its way toward reaching this goal.

Restoring Troubled Waters

Over the past 30 years, states, tribes and federal governments have successfully rallied to meet challenges of improving polluted waterways. These often require unique approaches, but to be successful, they all need the involvement and support of local communities. Three examples in New England are presented here.

The Charles River Initiative

EPA New England’s campaign to make the Charles River fishable and swimmable by Earth Day 2005 continues to make remarkable progress (Figure 9). Due to a variety of efforts by a broad coalition of river advocates, the river met boating standards 91 percent of the time and swimming standards 75 percent of the time during 1999. That’s compared to only 39 percent and 19 percent compliance, respectively, in 1995.

Various activities are underway to cut the flow of pollutants into the river. Seven communities along the river have nearly completed the removal of illegal connections between sewer and storm drains, stopping the discharge of over a million gallons of untreated sewage into the river every day. All 10 communities on the Lower Charles have developed stormwater management plans that have been reviewed by national urban stormwater experts. And last year, the Clean Charles Coalition, a consortium of 15 private institutions on the river, launched a public awareness effort to focus energy and attention to the river cleanup.

1995

2 out of 3 Metropolitan Areas—unhealthy in 1990—now meet Air Quality Standards



1995

EPA’s Project XL is Launched to help companies, facilities, communities and states develop innovative ways to achieve exemplary environmental results in common-sense and cost-effective ways.

November 1995

EPA New England Expands Indian Program by appointing EPA Tribe Coordinators for each of the nine tribal governments.

1995

National Marine Fisheries Service is forced to impose severe fishing and catch limits for cod and other groundfish on Georges Bank, as a result of depleted fish stocks

As the turnaround continues, the Charles is receiving more and more notoriety not just as a rowing mecca but as a national model for restoring highly urbanized rivers.

The Woonasquatucket: A River on the Rebound

The Woonasquatucket River, which flows 18 miles from North Smithfield to Upper Narragansett Bay, is the focal point of Rhode Island's urban revitalization efforts, particularly in downtown Providence where the river is the centerpiece for the nationally-acclaimed Waterfire shows. After years of neglect during and after the Industrial Revolution, the Woonasquatucket is now being targeted for cleanup activities and a "greenway." In August 1998, the river received national recognition when it was designated as an American Heritage River.

EPA New England has been actively involved with the Woonasquatucket since 1996, when the agency's Urban Environmental Initiative team first learned that urban residents were subsistence fishing and eel trapping in parts of the river. A subsequent EPA-sponsored sampling effort

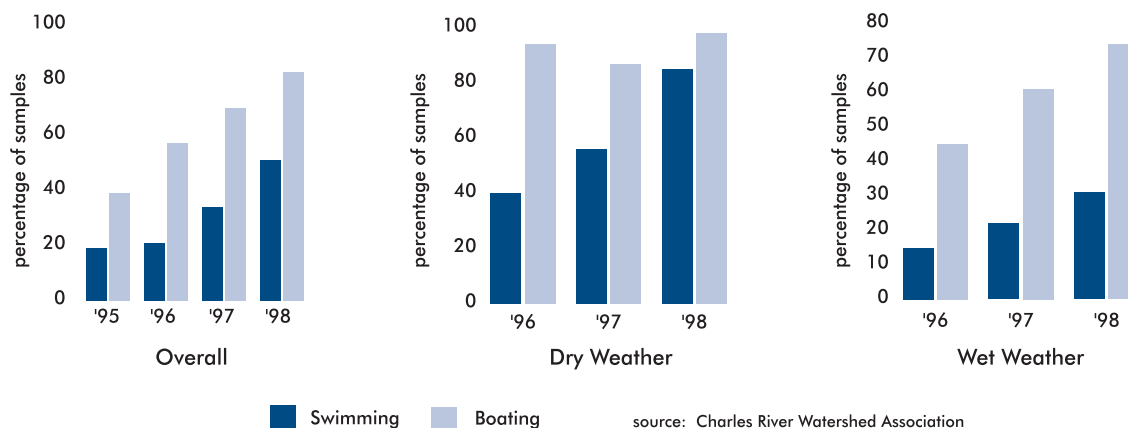
revealed dioxin contamination in the lower river, which led to a "catch and release" fish advisory that has been in place since fall 1996.

EPA New England is now working with state and local partners to determine the extent of the dioxin contamination and how it should be cleaned up. With strong local support, the site was recently named to the federal Superfund list which will ensure additional resources for a comprehensive cleanup. In the meantime, the UEI team has contacted thousands of residents about the "Do's and Don'ts for the Woonasquatucket River" to keep families safe. For more information, access our website at:
www.epa.gov/region01/ra/woonas/

Boston Harbor: An Environmental Success

In the 1980's, Boston Harbor was nationally renowned as one of the most polluted water bodies in the country. Billions of gallons of untreated sewage and industrial wastes spilled into the harbor every year, killing and contaminating marine life, closing beaches to swimming and causing odor problems for surrounding neighborhoods. Sewage treatment

Figure 9. Progress in the Charles River Basin - Samples Meeting Fecal Coliform Standards



January 1996
North Cape Oil Barge Spills
over 800,000 gallons off Rhode Island's coast.



August 1996
Food Quality Protection Act changes the way EPA regulates pesticides. Requirements include a new safety standard—a reasonable certainty of no harm—that must be applied to all pesticides used on foods.

1996
EPA Takes Action to Prevent Development of Sears Island, Maine, the largest undeveloped island on the entire East Coast.

1996
Amendments to Safe Drinking Water Act establishes State Revolving Funds to help communities pay for water protection measures.



facilities were built in the 1950s and 1960s, but they fell into disrepair due to underfunding.

In 1985, EPA New England sued the Metropolitan District Commission and the Massachusetts Water Resources Authority (MWRA) for widespread violations of the Clean Water Act. The lawsuit resulted in a court order requiring the MWRA to build a secondary wastewater treatment system for 43 Boston-area communities. The new Deer Island treatment facility—easily recognizable by its futuristic look-

ing egg-shaped sludge digesters—relies on aggressive industrial pretreatment and creative approaches to wastewater treatment, such as conversion of sewage sludge to fertilizer.

Benefits from the improved wastewater treatment have been enormous. The harbor's water is noticeably clearer, porpoises and harbor seals have returned to the area and concentrations of pollutants in fish and shellfish are down dramatically. We're also seeing more and more beaches open for swimming.

► Energy Conservation

- Paint your walls in a light color so more light is reflected
- Open blinds instead of turning on lights
- Dress warmly in winter so you can turn the heat down
- Reduce the temperature on your water heater
- Make sure your home is well insulated
- Turn off lights, fans, computers and the TV when they're not being used
- Use rechargeable batteries
- If it's not far, avoid using the car
- Use your clothesline as often as possible instead of a dryer
- Try carpooling or public transportation, even ONE day a week

► Bathroom

- Take shorter showers and use less water for baths
- Turn off the water while brushing teeth, shaving, etc.
- Check your toilet for "silent" leaks by placing food coloring in the tank and seeing if it leaks into the bowl
- Install a low-flow shower head and water-saver dam in the toilet tank

► Water Conservation in Your Home

Heating and pumping water requires energy. Energy, in turn, creates pollution such as acid rain and mercury emissions. If we can reduce the energy we use to pump and heat water, we can reduce pollution...and save money.

things you can do... pollution prevention tips

► Kitchen or Laundry

- Make sure your dishwasher and washing machine only run with full loads
- Compost your food scraps rather than using a garbage disposal
- Wash vegetables in a pan of water rather than under the faucet
- Use that same pan of water to pre-clean dishes after eating
- Keep a gallon of drinking water in the refrigerator rather than running the tap for cold water.
- Insulate your water pipes to save hot water

► Outdoors

- Wash your car with a bucket of soapy water rather than running the hose
- Keep a spring-loaded nozzle on the hose
- Wash your car less often or wash it at a car wash where they clean and recycle the water
- Use a broom instead of a hose to clean off your driveway or sidewalk

May 1997

Epa New England Issues Unprecedented Order Halting Military Training at Massachusetts Military Reservation on Cape Cod due to groundwater protection concerns.

February 1998

EPA Announces Clean Water Action Plan emphasizing collaborative watershed-based strategies to attain fishable and swimmable waters.

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1997

EPA Establishes Children's Health Protection Office to make protection of children's health a fundamental goal.

January 1998

Eklof Marine Pays a \$7 Million Criminal Fine for the 1996 North Cape Oil Spill off Rhode Island's coast - the largest oil spill fine ever in the continental United States.



promoting environmental stewardship



Photo: Steve Delaney

Ensuring compliance with environmental laws and regulations is a foundation of our work. Whether it's a large corporate polluter or a small municipal garage, EPA New England will never let anyone shirk their responsibilities for environmental protection and will use all means possible to bring civil and criminal violators to justice. Our commitment to strong enforcement was clearly evident in our 1999 enforcement results, which included more judicial referrals and more administrative penalty actions than at any time in the past eight years.

But we also realize that legal action is but one in an armory of tools to reach our ultimate goal of a cleaner and safer New England. One of our newer tools is to nurture and promote an environmental ethic in corporate America, an increasingly important activity as pollution sources become more diffuse and more difficult to regulate. We're also putting more emphasis on integrated strategies that link enforcement with compliance assistance tools.

And, lastly, we're targeting specific sectors where compliance is particularly nettlesome, and specific geographic areas where environmental improvements would provide an especially big public benefit. With all of these tools, we are committed to finding innovative solutions that will combine strong environmental protection with smarter, more efficient regulation.

Tackling Tough Cases

EPA New England and EPA's Criminal Investigation Division have invested significant resources in large complex cases with important environmental benefits for our natural resources. A few of the cases are particularly noteworthy for advancing our protection of estuaries, air quality and drinking water supplies. Among those successes:

- Northeast Utilities pleaded guilty last year to 25 felony counts for widespread environmental and nuclear violations at two of its power plants in Connecticut. The criminal violations, including the discharge of toxic chemicals into Long Island Sound and submitting misleading monitoring data, resulted in \$6.7 million in fines, the largest criminal environmental fine in Connecticut history.

- Saybolt Inc., a petroleum testing laboratory, was convicted for falsifying test results on reformulated gasoline and home heating oil, thereby undermining efforts to achieve clean air. The case was notable both for its \$4.9 million fine - the largest criminal environmental fine in Massachusetts history - and for signaling increased scrutiny of the petroleum testing and inspection industry.

- Pfizer Inc., a pharmaceutical manufacturer based in Groton, CT, agreed to settle a civil enforcement action alleging violations of hazardous waste, clean water and right-to-know requirements. Under the settlement, Pfizer paid a penalty of

\$625,000, and will spend approximately \$150,000 on two environmental projects aimed at improving hazardous waste management at schools and universities.

Sector-Based Strategies

A key component of our compliance strategy is integrating enforcement, assistance and pollution prevention in order to maximize environmental results. We're focusing these efforts on specific sectors where non-compliance is pervasive and the environmental benefits would be highest.

Among the sectors we've targeted is the region's universities and colleges. Upon noticing a widespread pattern of non-compliance during inspections, we decided last year to launch a coordinated enforcement/compliance assistance effort aimed at reaching all 258 universities and colleges in the region. We kicked off the initiative with a simultaneous announcement of a major enforcement action against the University of New Hampshire and mailing of enforcement warning letters to all of the region's university presidents. Apparently our message has been heard: more than 300 participants attended two assistance workshops we co-sponsored last year for university environmental managers.

We're also applying this targeted approach to the metal and wood finishing industries, auto body and repair shops and public agencies. Our auto sector initiative has relied heavily

Consent Decree with General Electric

Berkshire County and the City of Pittsfield have long struggled with the legacy of PCBs left by General Electric. To address this serious public health and environmental problem, EPA New England steadfastly pursued a negotiated agreement for a comprehensive cleanup of Pittsfield and the Housatonic River. Last fall, those efforts paid off.

After two years of intense negotiations, EPA, GE and various other parties signed a landmark settlement that will assure the cleanup of the Housatonic, GE's 250-acre property in Pittsfield, Silver Lake and floodplain properties along the river. Spelled out in a proposed Consent Decree lodged in federal court, the settlement also requires GE to fund a \$21 million natural resource damage package. GE has also agreed to spend \$45 million for the cleanup and revitalization of its Pittsfield property - among the largest investments of its kind in the nation. The settlement with GE has received widespread notoriety both as a mediation model for complex cleanup cases and for showing the benefits of strong public involvement in cleanup decisions.

1998
7,500th Underground Storage Tank Cleanup
completed in New England.



July 1998
Designation of 14 American Heritage Rivers,
including the Blackstone, Woonasquatucket and Connecticut Rivers in New England.

1998
350th Emergency Removal Action
completed in New England.

June 1998
Transportation Equity Act For the 21st Century, TEA-21,
provides record levels of funding to continue rebuilding highways without compromising environmental protection.

on technical assistance and pollution prevention. In just the past year, we've held 32 workshops, conducted 88 on-site visits and sent 45,000 mailings targeted at the auto industry.

We've also expanded assistance programs for public agencies. One assistance program aimed at DPW facilities in New England reached about 240 municipal officials. In a survey of attendees after several workshops in Massachusetts, 88 percent indicated greater awareness of environmental problems, 50 percent took some kind of compliance related corrective action and 25 percent implemented a pollution prevention activity. To make sure public agencies are complying, we've continued our aggressive campaign of inspections and enforcement actions. In just the past six years, we've taken more than 300 enforcement actions against municipal, state and federal agencies for environmental non-compliance.

Fostering Creative Solutions

By focusing more attention on the environmental outcomes of our work, we've learned that creative alternatives to traditional regulatory approaches can often yield far better environmental results at less cost. Three examples of this are worth noting:

- **Tackling CSOs in New England** – Finding innovative solutions will be critical in tackling one of New England's biggest remaining water quality challenges—a requirement that cities and towns eliminate thousands of miles of combined sewer overflow pipes. Built to carry both sewage and storm water, CSOs overflow directly into our waterways after heavy rains, causing widespread pollution problems. Cities from Hartford to Providence to Chicopee have all been ordered to eliminate or treat hundreds of millions of gallons of untreated sewage from these combined sewers that discharge into our rivers. EPA New England recognizes the significant financial burden these CSO abatement programs will place on communities—about \$4 billion in New England alone—and is working with communities to develop cost effective plans. EPA's CSO agreement with Manchester, NH is a good example of what we're trying to accomplish. The

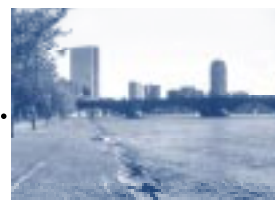
By allowing the CSO work to be done in phases, EPA was able to negotiate another \$5.6 million in other environmental improvements.

agreement, which has received the enthusiastic support of environmental groups as well as state and local leaders, requires the city to invest \$52 million in the first phase of a project to control CSOs along the Merrimack River. By allowing the CSO work to be done in phases, EPA was able to negotiate another \$5.6 million in other environmental improvements, including nonpoint pollution controls along the river, the purchase of important wetland areas in the city and a program to reduce childhood asthma and lead poisoning.

- **The University Labs XL Project** – Project XL, which stands for “eXcellence in Leadership,” is a national EPA program designed to experiment with new regulatory schemes that could achieve better environmental results at less cost. With seven XL projects in various stages of implementation, EPA New England has been a national leader in this effort. One of our more exciting projects is the New England University Labs XL Project aimed at finding more efficient ways of regulating and managing hazardous waste at university laboratories. Our University Labs project will give the three participating universities - Boston College, U-Mass Boston and the University of Vermont - more latitude in managing hazardous waste materials which, in turn, will better enable them to boost recycling efforts and slash the amount of hazardous waste they generate. A key piece of the project is the adoption of a new site-specific rule, applicable only to the three universities, that allows changes in the federal requirements for storing and handling hazardous

September 1998
EPA Adopts Rule calling for 22 eastern states to substantially reduce nitrogen oxide emissions to address ozone transport problems.

April 1999
Charles River Receives an Improved Grade of “B-” on Water Quality Conditions.



February 1999
EPA Launches a Smart Growth Initiative to combat sprawl in New England.



July 1999
Edwards Dam is Removed from the Kennebec River in Maine - the first hydroelectric dam in the country ordered removed by the U.S. government due to environmental protection concerns.

waste materials. The project's goal is to increase recycling by 20 percent and cut the amount of waste generated by 10 percent.

- **StarTrack** - Our StarTrack Program has been enormously successful in encouraging companies and agencies to voluntarily assess and improve their environmental performance. Fourteen companies and organizations in New England are currently participating in StarTrack. All have agreed to audit their environmental management and compliance performance each year, prepare and publish a comprehensive environmental performance report annually, and have their audit results reviewed and certified by an independent third party every three years.



StarTrack Participants in 1999

BOC Gases
Clairol
Dexter Corporation
E G & G Electro-Optics
Environmental Soil Management, Inc.
GAF Materials Corporation
International Paper Company-Androscoggin Mill
Sanders, A Lockheed Martin Co.
Spalding Sports
Texas Instruments, Materials & Control Group
Toray Plastics
U.S. Coast Guard Air Station
U.S. Postal Service
Unilever HP



Supplemental Environmental Projects (SEPs)

EPA New England has a strong commitment to negotiating innovative environmental projects - known as Supplemental Environmental Projects (SEPs) - in settling enforcement cases with violators. Last year, we negotiated 18 SEPs that funded more than \$7.7 million of projects, including a mercury reduction program at Massachusetts hospitals and a statewide lead abatement initiative for Rhode Island daycare centers. Under any settlement that includes a SEP, the violator has to pay a cash penalty and correct the violation in addition to performing projects that will produce concrete environmental and human health benefits. Among the SEP projects negotiated last year:

• Tackling Mercury Emissions

In settling a case against a North Andover-based trash incinerator, Massachusetts Refusetech, EPA allowed the company to spend \$91,000 to reduce mercury from the waste stream at a dozen hospitals and health clinics north of Boston. Such reductions will, in turn, reduce mercury emissions from area incinerators. The project includes a specific goal of substantially reducing mercury-containing products used in hospitals and health care clinics within one year. The company will work with hospitals and clinics to promote the use of mercury-free equipment and to recycle mercury-containing items that cannot be replaced.

• Exploring Innovative Technologies & Restoring Tidal Marshes

In settling an enforcement case involving violations at multiple facilities around the region, the United Technologies Corporation (UTC) agreed to spend more than \$500,000 over the next two years to perform two environmental improvement projects. One project involves a full-scale test of an environmentally-friendly technology that could replace current chrome-plating operations at a manufacturing plant in Connecticut. If successful, the technology could be used in other chrome-plating industries as well. The company also agreed to work with The Nature Conservancy to restore 200 acres of tidal marsh along the Connecticut River in Old Lyme, CT. The agreements stem from independent environmental audits completed by UTC under terms of an earlier enforcement settlement and reflect major environmental strides made by the company in the 1990's.

October 1999

U.S. vs. Morelite Development and Construction, Inc. of New Haven, CT. results in nine criminal convictions stemming from Mexican immigrants being ordered to remove large quantities of dry asbestos, which was later dumped in poor New Haven neighborhoods.

January 2000

EPA New England Orders the National Guard to Clean Up Unexploded Ordinances and other contamination at the Massachusetts Military Reservation.

2000

October 1999

EPA New England Finalizes Proposed Consent Decree requiring General Electric to undertake cleanup of PCB contamination in the Housatonic River and Berkshire County.



February 2000

Centredale Manor and Portions of Woonasquatucket River Added to Superfund NPL, the 100th NPL site in New England.

challenges in the next century

New Englanders should be proud of their environmental protection achievements over the past 30 years. From Lubec to Lakeville, we have cleaner water, air, landscapes and neighborhoods. We're also seeing the economic benefits of these improvements - benefits such as flourishing tourism along the Blackstone and Connecticut Rivers and urban vitality in Bridgeport and Lowell, both cities where residents are flocking to minor league baseball stadiums built on former contaminated industrial parcels.

As EPA and our many local partners look to the future, we see plenty of challenges ahead. We are confronted with environmental issues that know no borders - interstate air pollution, regional growth challenges and, most daunting of all, the specter of global climate change. We're also confronted with local challenges like abandoned properties, polluted stormwater and lead-contaminated soils.

We can't predict what New England's environment will be like in 30 years, but we do know our progress will be based on many of the lessons we've learned so far. Among the most important lessons we've learned is the value of a strong commitment to public involvement and close collaboration with our partners. We've also learned the importance of sharing public information and making sure that information is useful for New Englanders trying to lead healthier lives - especially our children. Science and technology have opened huge doors to increase public knowledge, but we've only touched the tip of the iceberg.

With our experience and hard-won knowledge, we are confident that together we'll find new and successful ways of protecting our health and the environment in the next century.

Global Climate Change: Finding Solutions in New England

In 1987, widespread concerns about ozone-destroying CFCs prompted the first truly global response to a global environmental problem. Thirteen years later, we face another global air challenge - the prospect of worldwide climate change caused by the accumulation of greenhouse gases in our atmosphere.

While scientists do not know the exact causes of climate change, we do know that humans are contributing to the proliferation of greenhouse gases through the widespread burning of fossil fuels. Carbon dioxide from burning fossil fuels is a chief component of greenhouse gases.

Three years ago, EPA New England launched an ambitious plan to increase public understanding of climate change and reduce actual greenhouse gas emissions across the region. Through such programs as Green Lights, EnergyStar Buildings and ClimateWise, we've greatly expanded voluntary energy efficiency and pollution prevention efforts around the region to curb greenhouse gas emissions. These voluntary programs have already resulted in a reduction of 1.3 million pounds of carbon dioxide emissions, the equivalent of taking 46,000 vehicles off the road. Participating companies also lowered their energy bills by more than \$22 million annually.

EPA funding has enabled five New England states to complete greenhouse gas emission inventories and two of the states are moving forward with climate change mitigation plans—a step-by-step set of measures to reduce greenhouse emissions. EPA is also committed to educating New Englanders on this important issue. This spring, as part of Earth Day 2000, dozens of EPA staffers will be visiting our elementary schools to teach students about climate change and what they can do at school and at home to reduce the pollution that may be causing it.

If your family followed the tips below, you could cut CO₂ emissions by more than 11,000 lbs/year! You can get more information on what you can do at www.epa.gov/globalwarming/actions/individual

global warming tips: 10 ways you can help	
	CO ₂ reduction
❶ Plant two additional trees around your home...	20 Lbs/Year
❷ Use a push lawn mower instead of a power mower...	80 Lbs/Year
❸ Replace your home's refrigerator with a high-efficiency model...	220 Lbs/Year
❹ Buy food and other products with reusable or recyclable packaging instead of nonrecyclable packaging...	230 Lbs/Year
❺ Replace your current washing machine with a low-energy, low-water use machine...	440 Lbs/Year
❻ Install a solar hot water system to help provide your hot water...	720 Lbs/Year
❼ Recycle all of your home's waste newsprint, cardboard, glass, and metal (recycling plastic will further increase the reduction)	850 Lbs/Year
❽ Leave your car at home two days a week by carpooling, walking, biking or using public transportation to get to work...	1,590 Lbs/Year
❾ Insulate your home, tune up your furnace, and install energy-efficient shower heads...	2,480 Lbs/Year
❿ Purchase a fuel-efficient car (rated at 32 mpg or more) to replace your most frequently used automobile...	5,600 Lbs/Year

Protecting Communities from Sprawl

Among the region's most daunting challenges is rejuvenating our urban centers and reversing the spread of sprawl, which is devouring open space, clogging highways, worsening water pollution and eating away at the sense of community that helps define us as New Englanders.

EPA New England has taken a lead in tackling the sprawl issue. Our smart growth conference last year in Boston attracted more than 1,000 environmentalists, civic leaders, planners and developers from across the region. At the conference, we unveiled a \$1.5 million action plan aimed at preserving open space, revitalizing urban areas, and empowering communities and local groups to better manage growth.

The program is off to a good start. Our Brownfields and Urban Environmental Initiative (UEI) programs are making our cities more livable and economically vibrant and we recently awarded our first round of Livable Community Grants—a package of seven grants totaling \$226,000. We're also moving forward with a training program for community officials and with a federal agency partnership that will identify smart growth solutions in such areas as Hartford, the Woonasquatucket River and Boston's South Shore.





Protecting the health of our children is one of our top priorities.

Lastly, we continue to use our regulatory authority to fight poorly planned development projects. Last summer, we opposed a two-million-square-foot “super” retail mall in South Weymouth due to traffic and water shortage concerns. We also threatened to veto an ill-conceived highway in Conway, NH, an action that prompted the town to approve various environmental controls to protect wetlands and limit sprawl in the area. Creating truly livable communities for all of New England’s residents will take a tremendous effort by all of us, but we have made a good start.

Children’s Health

Protecting the environment and health of our children is one of our top priorities. Children are more vulnerable to environmental risks than most adults and we need to be mindful of this every time we apply our rules and regulations. Such was the case, for example, when we turned up the pressure on General Electric to move more quickly to clean up the PCB-contaminated Housatonic River. We will continue to expand innovative projects such as our award-winning lead testing and abatement programs, our healthy schools air quality programs, and our Manchester, NH Child Health Champion pilot project, an initiative to train local residents to help families change their home environments so they are safer for children. And, lastly,

we’ll rely on education and empowerment to protect our youngsters. As a kick-off to this commitment, we are planning a “Youth Summit” for Earth Day 2000, which will bring together 500 of the region’s young environmental leaders from area high schools for a day of learning and training. All participants will be encouraged to sign a pledge card to protect the environment through their work.

Getting Quality Information to the Public

Citizens must be informed about environmental conditions that can impact their health - conditions such as high smog levels that increase respiratory problems, water bodies that are unsafe for swimming and lead-contaminated soils that compromise children’s learning abilities. EPA New England will use any and all means to meet this challenge whether it’s door-to-door pamphlet drops, neighborhood meetings or posting information on the World Wide Web. Strong science must also be the foundation for all of our work. We will continue to use high-quality science and the latest available technologies in measuring our environmental results and in rapidly reporting that information to local communities. Many of our most promising efforts in this regard have been through Environmental Monitoring for Public Access and Community Tracking (EMPACT), a new national program providing select New England cities

with “real-time” information about local water quality conditions, local air conditions and, in some cases, local soil conditions. Already we’re using EMPACT to train Boston residents on using hand-held sensors to do on-the-spot lead soil sampling in residential backyards. We’re also using EMPACT to keep swimmers, boaters and fishermen on Long Island Sound updated daily and hourly about changing water quality.

Partnerships for the Future

Perhaps the most important characteristic of the environmental protection work we do over the next 30 years will be the partnerships we create. Quite simply, EPA New England cannot do it alone. Much of our success so far is due to the dedication and effectiveness of the many New Englanders who have worked with us in finding smart and effective environmental solutions. In the years ahead, we will be build-

ing on these relationships to find other innovative ways for protecting our shared environment.

EPA New England owes a debt of gratitude to tribal governments, state and local agencies, and private businesses throughout the region who are raising the bar for environmental protection. We also are grateful to residents in all corners of New England who have joined us in the common goal of a healthy environment.

In the past 30 years, we have helped to bring about significant improvements in our environment. We are ready to face the challenges of the next century and find new ways of reaching our environmental goals. But only by working together will we succeed. The environment is not just in the hands of EPA New England. It is in the hands of all of us.

Tread Lightly: Getting Our Own House in Order

On Earth Day last year, EPA New England announced our Tread Lightly Project, an effort designed to address the environmental impacts of our office operations, with a special emphasis on reducing greenhouse gas emissions. In order to set annual goals for our Boston office, we converted the environmental impacts of our activities (such as electricity and heating usage for our offices, solid waste produced by our offices, and employee travel) into units of carbon dioxide emissions, the principal greenhouse gas. Before the program began, EPA New England was producing 14,000 pounds of carbon dioxide emissions per person per year from heating, cooling and lighting our offices, paper consumption, travel and other activities. We set a goal of a 20% reduction by Earth Day 2002. During the first two quarters of last year, the project achieved an impressive reduction of nearly 1½ million pounds a year of CO₂ emissions, a 13% cut, due largely to a new office recycling program that resulted in a 23% increase in recycling.



TREADlightly

Reducing Our Environmental Footprint

credits

For general information, customer assistance, to report a tip or complaint about a potential environmental violation or to request assistance from the New England Environmental Assistance Team:
Customer Assistance Line:
(888) EPA-REG1 (888-372-7341)

Emergency Response:
(for reporting spills/environmental incidents):
(800) 424-8802

Criminal Investigation Division (24 hours):
617-918-2300

EPA New England Library:
(888) EPA-LIBR (888-372-5427)

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Project Managers
Maureen Hilton, Diane Switzer and Carol Wood

Editors and Public Affairs Coordinators
Andrew Spejewski and Peyton Fleming

Editing
Tatiana Brailovskaya, Nereus Communication, Inc.

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Liz Pucci, SES, Inc.

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